



(19) Eur pâisches Patentamt
European Patent Office
Offic eur pé n des brevets



(11) EP 0 997 358 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
21.11.2001 Bulletin 2001/47

(51) Int Cl.7: B60R 22/12, B60R 22/48,
B60R 22/16, B64D 25/06

(43) Date of publication A2:
03.05.2000 Bulletin 2000/18

(21) Application number: 99202589.0

(22) Date of filing: 06.08.1999

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE

Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 29.10.1998 US 182852

(71) Applicant: Breed Automotive Technology, Inc.
Lakeland, FL 33807-3050 (US)

(72) Inventor: Smithson, Alan
Carlisle, Cumbria CA4 8QD (GB)

(74) Representative: Croston, David et al
Withers & Rogers,
Goldings House,
2 Hays Lane
London SE1 2HW (GB)

(54) Safety belt with load sensor

(57) A load sensor (24) for a vehicle safety belt (10) comprises means for determining an electrical characteristic of the belt and control means for comparing the sensed characteristic with a reference level for the characteristic. In one embodiment, conductive fibers (26, 28) are interwoven into the belt and electrical contacts (30, 32) are provided at each end 20 thereof. Excessive loading of the belt results in a break in the fibres which, in turn, results in electrical discontinuity. The discontinuity is sensed by an electrical sensor and indicator means is provided to indicate to the driver of the vehicle that a belt has been excessively loaded.

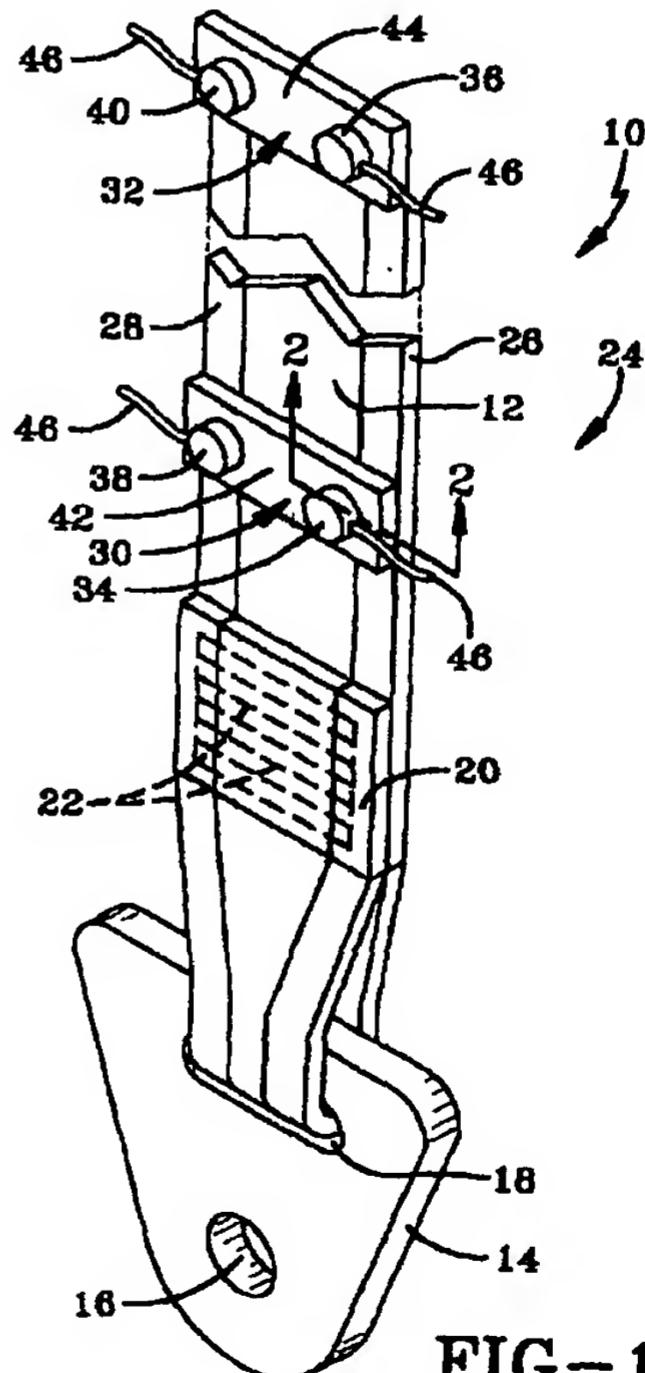


FIG-1



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 20 2589

DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)						
A	DE 25 08 728 A (BERGER OHG ELASTIC) 9 September 1976 (1976-09-09) * figure 2 * * page 1, paragraph 4 * * page 4, paragraphs 1,2 * * page 5, paragraph 3 * ---	1-3	B60R22/12 B60R22/48 B60R22/16 B64D25/06						
A	US 3 926 227 A (TAKADA DECEASED TAKEZO ET AL) 16 December 1975 (1975-12-16) * figures 1-58 * * column 1, line 5-7 * * column 2, line 7 - line 50 * * column 2, line 65 - column 3, line 15 * ---	1							
A	DE 37 14 088 A (MESSERSCHMITT BOELKOW BLOHM) 1 December 1988 (1988-12-01) * figures 1,4,5 * * column 2, line 66 - column 3, line 14 * * column 4, line 35 - line 64 * ---	1							
A	US 4 958 853 A (DOTY GERALD A) 25 September 1990 (1990-09-25) * figures 1-5 * * column 1, paragraph 1 * * column 2, line 49 - column 3, line 58 * ----	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) B60R B64D A62B						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 33%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>1 October 2001</td> <td>D'sylva, C</td> </tr> </table> <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>				Place of search	Date of completion of the search	Examiner	THE HAGUE	1 October 2001	D'sylva, C
Place of search	Date of completion of the search	Examiner							
THE HAGUE	1 October 2001	D'sylva, C							

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 20 2589

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-10-2001

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
DE 2508728	A	09-09-1976	DE	2508728 A1	09-09-1976
US 3926227	A	16-12-1975	AU BE CA DE FR GB NL	6403573 A 809100 A1 995561 A1 2364956 A1 2212758 A5 1413200 A 7317774 A	03-07-1975 16-04-1974 24-08-1976 11-07-1974 26-07-1974 12-11-1975 02-07-1974
DE 3714088	A	01-12-1988	DE DE JP US US	3714088 A1 3744737 A1 1009049 A 4941710 A 5039168 A	01-12-1988 02-02-1989 12-01-1989 17-07-1990 13-08-1991
US 4958853	A	25-09-1990	NONE		

EPO FORM P0458

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82